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PROGRAMME, THE ENVIRONMENT FUND AND ADMINISTRATIVE AND OTHER BUDGETARY MATTERS

Freshwater issues: Progress in the implementation of Governing Council decision SS.V/4 and environmental issues arising from the decision

Report of the Executive Director

Summary

The present report is prepared pursuant to Governing Council decision SS.V/4. It identifies the freshwater strategy of the United Nations Environment Programme (UNEP) as a framework for UNEP freshwater issues and activities into the twenty-first century.

Suggested action by the Governing Council

The Governing Council may wish to:

1. Endorse the freshwater strategy contained in the annex to the report of the Executive Director 1/ as a framework for UNEP to address freshwater issues and carry out activities in the field of freshwater;

2. Stress that assessment and integrated water management activities, as proposed in the report of the Executive Director 1/ and consistent with the longer-term priorities outlined in the freshwater strategy, are a priority for UNEP in the field of freshwater;

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* UNEP/GC.20/1.

1/ The present report.

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3. Request the Executive Director to intensify collaborative activities with Governments, as well as agencies and organizations both inside and outside the United Nations system, in the area of freshwater, as proposed in the report of the Executive Director 1/ and consistent with the longer-term priorities outlined in the freshwater strategy;

4. Request the Executive Director to report to the Governing Council, at its twenty-first session, on progress in the implementation of the water-related goals outlined in the freshwater strategy.

I. BACKGROUND

1. The need of humanity for adequate supplies of freshwater, both for its survival and for social and economic development, will remain a major national and international priority in the years to come. An adequate supply of freshwater is the most important precondition for sustaining human life for maintaining ecosystems that support all life, and for achieving sustainable development. The inescapable reality is that, without adequate supplies of clean, safe water, people will suffer and many will die prematurely, ecosystems will cease to perform their human-sustaining functions and the potential for social and economic development will be drastically reduced. Ironically, freshwater is abundant throughout the world on a regional basis. At the same time, however, it is unevenly distributed by nature. Thus, while some countries have high per capita water availability, many others are now facing, or will soon face, a situation of water scarcity in which their populations and their social and economic development cannot be sustained with the available water resources. Furthermore, with population growth and industrialization, particularly in the developing world, the supply of readily available and replenishable freshwater is nearing exhaustion in many regions; in others, it is already exhausted.

2. Many hundreds of millions of people already do not have access to adequate supplies of freshwater. In addition to nature's uneven distribution of the world's freshwater supply, humans in many regions are aggravating the problems with the prevailing - and incorrect – view that water will be perpetually available, and at relatively cheap prices. Previously, freshwater had a relatively low priority on global and national political agendas. In addition, a sectoral approach to water resources, combined with a lack of coordination among freshwater users, has resulted in the fragmentation of decision-making authority for water among many sectors and departments at the national and international level. Unfortunately, this situation also characterizes the United Nations and other international agencies with mandates relating to freshwater. Finally, perhaps most significant is the lack of a common vision among the many actors involved with water management issues.

3. This situation was highlighted in a series of regional workshops convened by UNEP to address implementation of the freshwater chapter (chapter 18) of Agenda 21. Notwithstanding previous efforts of Governments, donors, the United Nations and other international organizations, existing information suggests that many Governments are having difficulties in achieving the freshwater goals of chapter 18. Governments in all the regions identified a number of common obstacles to implementation of chapter 18, as follows:

(a) Lack of proper coordination of management activities, and of appropriate management tools;

(b) Inability to integrate water-resource policies;

(c) Institutional fragmentation;

(d) Shortfalls in needed funding and insufficiently trained and qualified manpower;

(e) Inadequate public awareness; and

(d) Low level of involvement of communities, non-governmental organizations and the private sector in water management activities.

4. UNEP is particularly concerned that the notion of "sustainable development", at a time of fiscal austerity in many countries, may be slowly eroding to a point where it is merely "development". In recognition of this possibility, at its nineteenth session, the Governing Council of UNEP requested the Executive Director to place a higher priority on freshwater in the 1998-1999 biennium. UNEP undertook to achieve this goal in implementing its freshwater activities during the 1998-1999 biennium, and completed a number of assessment activities and publications, as well as facilitating a number of specific integrated management activities relating to international water basins. At the same time, the scope of freshwater activities during the biennium is admittedly, narrower than in previous bienniums, owing to significant financial and human resource constraints.

5. A major follow-up activity to the nineteenth session of the UNEP Governing Council was the development of a comprehensive UNEP freshwater strategy. This strategy document was directed to identifying the responsibilities of UNEP vis-à-vis freshwater resources within the context of sustainable development, and was meant to provide the basis for UNEP work in this area over the medium term. This document entitled "Freshwater strategy of the United Nations Environment Programme, following the special session of the United Nations for the purpose of an overall review and appraisal of the implementation of Agenda 21" (UNEP/HLC/2/4), focused on the elements of a longer-term action programme for addressing the management and sustainable use of transboundary freshwater resources. The document noted that UNEP had a major role to play in the areas of, first, freshwater assessments (including freshwater, coastal and marine waters); second, integrated water resource management, including protection of human-valued ecosystems; third, protection of water quality; and, fourth, water-related dispute avoidance and resolution.

6. The freshwater strategy was submitted for discussion by the UNEP High-Level Committee of Ministers and Officials at its second meeting on 17 and 18 November 1997. A summary of the strategy was also distributed to the Commission on Sustainable Development at its sixth session in April 1998. The UNEP freshwater strategy is reproduced in the annex to the present report. It is proposed that the Governing Council might wish to consider and endorse the freshwater strategy as the basis for freshwater work by UNEP over the 2000-2001 biennium.

II. DIRECTION PROVIDED BY THE HIGH-LEVEL COMMITTEE OF MINISTERS AND OFFICIALS AT ITS SECOND MEETING AND THE GOVERNING COUNCIL AT ITS FIFTH SPECIAL SESSION

7. The role played by UNEP in assisting Governments in addressing freshwater resources is both comprehensive and specific. At the second meeting of the High-Level Committee of Ministers and Officials, Governments agreed that UNEP should play a vital role in giving substantive environmental input into freshwater issues, including those being developed by the Commission on sustainable Development. The Committee also identified a range of possible issues for UNEP to consider within this mandate, including access to safe drinking water, sanitation, food production, agricultural irrigation, industrial development, community participation approaches, preservation of ecosystems, integrated water management, cooperation on transboundary water issues (including assisting developing countries in developing their abilities to manage their water resources), the development of tools for the monitoring and analysis of water quality and quantity, technology transfer and institutional strengthening. By its decision 6/1, the Commission on Sustainable Development reinforced the environmental focus of UNEP, calling upon UNEP to collaborate with other members of the Subcommittee on Water Resources of the Administrative Committee on Coordination (ACC) to provide "technical and scientific advice on environmental aspects of the sustainable development of freshwater resources".

8. At its fifth special session, the Governing Council reiterated this view, directing UNEP to enhance its role in the environmental aspects of sustainable development and management of freshwater. By decision SS.V/4 of 22 May 1998, in addition to requesting the Executive Director "to cooperate with other organizations and programmes of the United Nations system and other international bodies through the Subcommittee on Water Resources of the Administrative Committee on Coordination in promoting arrangements for cooperation on the environmental aspects of freshwater", it specifically requested the Executive Director, within the existing work programme of UNEP, to facilitate "the provision of advice and assistance to States, on request, on strengthening integrated river basin management".

9. It also requested the Executive Director, in consultation with Governments and other relevant United Nations organizations and programmes, to focus on a number of specific issues, including:

"(a) To assist countries, particularly developing countries, to establish methods of identifying environmental problems of freshwater in order to find the underlying causes of these problems;

"(b) To assist countries, particularly developing countries, to establish the capacity to collect, interpret and disseminate information relating to the environmental aspects of water-management decisions;

"(c) To facilitate the surveying, development and dissemination of technologies and methodologies for the environmentally sound management of freshwater;

"(d) To promote the best use of water technology centres in developing countries for the purposes of South-South cooperation;

"(e) To examine how corporate voluntary agreements and initiatives could enhance the role that industry can play in the freshwater area; and

"(f) To create mechanisms for assisting countries, in particular developing countries, in the identification of effective and appropriate practices in public participation in addressing environmental aspects of freshwater".

10. All the bodies referred to above highlighted the collaborative role of UNEP in promoting arrangements for cooperation on the environmental aspects of freshwater, with Governments and with other organizations and programmes of the United Nations system and of international organizations.

III. ENVIRONMENTAL ASPECTS OF FRESHWATER RESOURCES

11. The so-called "environmental aspects" of freshwater resources touch virtually all human and ecosystem freshwater needs. In view of its limited financial and manpower resources, however, UNEP cannot effectively address all these aspects at the same time. Thus, UNEP will target its freshwater activities in a proactive manner during the coming biennium, consistent with its identified freshwater priorities and its financial and human resources. To this end, it is proposed that UNEP freshwater activities for the 2000-2001 biennium focus on the complementary issues of, first, freshwater assessments and, second, integrated freshwater resource management. In addition, rather than dispersing its limited financial and human resources across a large number of small-scale activities, it is proposed that UNEP concentrate its efforts in fewer, but more substantive, activities undertaken to address the above-noted freshwater issues.

12. It is also noted that the environmental aspects of freshwater resources include both water quantity and water quality issues. Water quantity refers to the absolute quantity of available freshwater (including floods and droughts), while the water quality refers to the quality or pollution status of these resources. These two aspects can vary significantly in their impacts, both in regard to their location and to their timing.

13. To this end, UNEP freshwater assessment activities for the 2000-2001 biennium are defined in the broadest context, to include not only determining the pollution state of rivers, lakes and groundwater resources, but also attempting to identify the underlying reasons why these resources are polluted, and what this means within the broader context of social and economic development. UNEP will also attempt to provide an element of early warning in regard to emerging water-related issues and problems.

14. As the logical follow-up to its assessment activities, UNEP activities in integrated water management will focus on assisting Governments, upon request, to address the water-related problems identified in its assessment activities. Given its available resources and comparative advantages, it is felt that UNEP freshwater-related activities will likely make the greatest difference in these two major areas. Thus, the overall approach by UNEP to freshwater resources during the 2000-2001 biennium is characterized as a complementary process of, first, identifying water-related environmental problems (namely, where they occur; how serious they are; what their causes

are); and, second, assisting Governments, particularly of developing countries and countries with economies in transition, in adequately addressing them (namely, determining what can be done about them, who should do it and how it should be done).

IV. PRIORITY FRESHWATER ASSESSMENT ACTIVITIES FOR THE 2000-2001 BIENNIUM

A. Need for accurate information

15. Before Governments can address water-related environmental problems, they must have accurate information: they need to know precisely what the problem is, where it is occurring, how serious it is, and what is causing it. Such information is necessary as the basis for determining cost-effective and lasting solutions to water-related problems. Many Governments view freshwater assessments simply as a process of collecting and analysing water-quality data and information for the purpose of state-of-the-environment reports. This is, in fact, one particular goal of UNEP freshwater assessment activities, and it will continue to assess water-quality conditions on a global and regional basis. The goal is to provide better quantitative pictures of current water-quality conditions and trends in water quality and water uses, and to facilitate the identification of emerging issues and future priorities.

B. UNEP water assessment activities

16. UNEP is currently engaged in several water-related assessment activities. As previously noted, UNEP was requested to assist countries in identifying the environmental problems of freshwater, including enhancing their capacity to collect, interpret and disseminate information related to the environmental aspects of water-management decisions. To this end, UNEP is currently involved, inter alia, in: the Global International Waters Assessment; the water component of the Global Environment Monitoring System (GEMS/Water); and regional assessments of the impacts of land-based activities in support of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, including that of the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

17. The Global International Waters Assessment will focus on five major water-related issues (freshwater scarcity, water pollution, habitat alteration and degradation, overexploitation of living aquatic resources, and global cycles and issues), including their spatial occurrence and underlying causes. The Assessment is probably the major water-related assessment to be undertaken by UNEP as a new activity in the forthcoming biennium. At the same time, the Assessment has a defined life of four years, highlighting the need for UNEP to consider some mechanism which would continue to further the purposes of the Assessment beyond that period. Because of its comprehensive nature in attempting to address both the state of the water environment, and the underlying causes of identified freshwater problems, UNEP will work to ensure that its other water-related assessment activities provide information that is useful within the context of the Global International Waters Assessment.

18. GEMS/Water is the only global freshwater water-quality monitoring and assessment programme within the United Nations system. It is a more focused assessment activity than the Global International Waters Assessment, being developed primarily to provide a continuing picture of global water quality, on the basis of continuing assessments conducted at the regional level. The difficulty of obtaining a comprehensive picture of water quality on a global scale suggests that the spatial coverage of GEMS/Water, as well as the underlying rationale for some of its monitoring and assessment activities, should be given further consideration.

19. The Global Programme of Action and GESAMP assessments are even more focused, with the specific goals of identifying the impacts of land-based activities on oceans and coastal waters and their associated freshwater basins. Nevertheless, in view of the similarities between some of the goals of these assessment activities, UNEP will work to ensure that all freshwater monitoring and assessment efforts are integrated and coordinated, in the hope of avoiding the duplication or overlapping of goals. In that context, the early-warning methodology of GEMS/Water will be activated as a means of providing reliable information for Governments, to assist them in addressing existing and emerging water-quality problems before they become major environmental issues.

C. Social and economic aspects of water assessments

20. Social and economic activities have a profound effect on both the quantity and quality of freshwater resources. In response to that effect, UNEP will work to refine its considerable assessment capabilities, not only to provide snapshots of the state of freshwater resources, but also information on the root social and economic causes of water-related problems. It will work to develop and test methodologies and tools for addressing the social and economic dimensions of integrated freshwater resources, particularly as they relate to the environmental aspects of sustainable development. Such elements are implicitly included in the UNEP integrated freshwater management programme for the environmentally sound management of inland waters, (EMINWA). Experience to date, however, has demonstrated the need for scientifically sound, practical methodologies and tools to identify and realistically assess such social and economic factors, as a means of enhancing the ability of Governments to use such information in the development and implementation of policies to address the environmental aspects of water resources. UNEP will work to refine its water-related assessment process, to include identification and examination of the scientific, technical and, in particular social and economic factors (and failures) that constitute the basic causes of the identified water-quality problems.

21. For a given freshwater basin, effective integrated water resource management is based on examination of a number of factors, including the successes and failures of existing Government policies and institutions relating to the supply and use of freshwater resources. At present, however, there is little practical guidance on the best way to examine these elements, particularly within the context of national development plans and goals. Effective implementation of sustainable water-related development also requires that existing institutions and institutional structures be assessed in an appropriate manner. Practical guidelines are also needed for examining

the existence - or lack - of appropriate linkages between the many national government agencies responsible for various aspects of the management and use of freshwater resources. The same is true for legal and economic frameworks as they relate to sustainable freshwater resources.

22. On a practical level, however, it is not clear what type of economic instruments work and what types do not, and under what conditions. In addition, special attention must be given to enhancing the ability of developing countries to use such innovative economic and policy instruments. To this end, UNEP will work to develop practical methodologies and tools for such assessments, as well as to assist Governments in using economic and policy instruments within the context of sustainable freshwater resources (including at the local level). The overriding goal is to ensure that UNEP assessment activities not only provide information necessary for assessing the state of freshwater resources, but also help identify the social and economic factors that determine how humans use these resources.

D. Rapid river basin assessments

23. In addition to the comprehensive water-related assessments indicated above, there also is a need for rapid river basin assessments, as a means of providing a prompt, if less comprehensive, overview of the state of freshwater resources, as well as their implications for other environmental and social and economic components. In cooperation with the World Bank and other organizations, UNEP initiated promising activities in the development of rapid river basin assessment methodologies during the previous biennium. Such efforts will be used as a springboard for further efforts during the 2000-2001 biennium. Recognizing that the environmental aspects of some water problems may require accurate information within a relatively short period of time, UNEP will pay greater attention during the 2000-2001 biennium to the development and testing of rapid river basin assessment tools and methodologies.

E. Services of aquatic ecosystems of value to humans

24. Lakes, rivers, wetlands and other aquatic ecosystems perform a variety of services of value to humans, including water regulation and supply, nutrient cycling, waste treatment and climate regulation. These represent fundamental services that nature provides to humans, free of charge. The ecological services provided by wetlands, for example, are estimated to average about $15,000 per hectare per year. The average estimated value for rivers and lakes is $8,500 per hectare per year. Thus, the preservation of these aquatic ecosystems and the services they perform is in humanity's economic interest. Existing data and information suggest, however, that many aquatic ecosystems are being degraded at an alarming rate on a global scale, and the situation will likely worsen in the future. As a follow-up to initial efforts in this area, therefore, UNEP will seek to provide information and data relevant to aquatic ecosystem management, including developing a clearer understanding of the water needs of aquatic ecosystems, as well as their human-valued functions. In addition, although aquatic biodiversity is recognized by many scientists as one of the most sensitive

indicators of freshwater ecosystem degradation, it is difficult to use such information in the context of water resource management. UNEP will work to address this deficiency by undertaking relevant scientific assessments and studies.

V. PRIORITY FRESHWATER MANAGEMENT ACTIVITIES FOR THE 2000-2001 BIENNIUM

A. Integrated freshwater management

25. Governments, United Nations agencies and other relevant organizations have repeatedly identified integrated water resource management as the most logical approach to addressing sustainable water use. UNEP has considerable experience in this area, based in part on the integrated management approach embodied in its programme for the environmentally sound management of inland waters (EMINWA). This integrated approach to freshwater management and use considers the scientific and technical aspects of transboundary waters, as well as the social and economic factors that dictate how humans use their water resources. An integrated approach to water resource management was subsequently adopted by Governments in chapter 18 of Agenda 21.

B. Assessments and management linkages

26. As noted above, at its fifth special session the UNEP Governing Council requested the Executive Director to facilitate the provision of advice and assistance to States, on request, on strengthening integrated river basin management. In addition, UNEP water-related assessment activities are designed in part to provide needed data and information that can be used by decision-makers on a practical level to design and implement sustainable water-management and water-use policies and programmes. In fact, UNEP has assisted Governments in the past to develop comprehensive management action plans, particularly for transboundary river basins. In the 2000-2001 biennium, UNEP will continue its efforts to enhance the ability of Governments to undertake policy development and implementation in regard to the environmental aspects of integrated water management.

E. Drainage basin emphasis

27. Viewed from a hydrological perspective, the world may be described as a vast ocean whose surface is broken by a large number of freshwater drainage basins which drain to the oceans. In fact, river basins represent the fundamental freshwater management unit, and UNEP will continue to assist Governments, upon request, in developing freshwater management plans applied at the river basin scale, particularly for transboundary river basins. Sustainable freshwater management programmes for urban or agricultural areas, for example, must be developed in the light of their relevance to the water requirements within the entire drainage basin. Management programmes that focus only on specific water-related components of a drainage basin can easily result in erroneous policy development and implementation activities within the basin. Accordingly, UNEP will continue to promote a comprehensive drainage-basin approach in addressing the issue of sustainable freshwater resources. It will also endeavour to refine its integrated management

approach, so as to factor in the impacts of specific types of water management practices on freshwater resources within the context of the entire drainage basin.

D. International cooperation and agreements

28. Many countries share one or more freshwater systems - rivers or lakes. In fact, it is estimated that there are more than 300 transboundary river basins, as well as numerous groundwater aquifers that are shared by two or more countries. This sharing can take the form of an upstream-downstream relationship, with a river flowing from one country to another. Alternatively, it can be a common river or lake serving as a national boundary between two or more countries. Yet there are very few international agreements or conventions, or relevant laws and regulations, to provide for the sustainable management and use of these important freshwater resources. In fact, many - if not most - countries tend to focus on their domestic water requirements, within the context of their national development plans and goals. As a result, inequities in the supply, quality and use of internationally shared freshwater resources can arise, creating the potential for conflicts between the riparian countries and for the inefficient and wasteful use of such shared freshwater resources.

29. Accordingly, UNEP will continue to promote international cooperation within the context of its integrated river basin management activities, including facilitating global and regional multilateral agreements for internationally shared freshwaters. It will also continue to refine its capabilities to serve, if requested by Governments, as a neutral "broker" assisting countries in ensuring the equitable access to, and use of, these freshwater resources.

30. UNEP experience with its EMINWA activities has also demonstrated that international cooperation in the integrated management and use of transboundary waters can be hindered by many obstacles, including inadequate funding, inadequate institutional or legal structures, and inadequate understanding of common problems. To this end, UNEP will initiate an evaluation of the effectiveness of existing international instruments or agreements designed to facilitate cooperation between countries regarding shared international water resources. It is the intention to examine these agreements within the context of their regional settings, as well as contrasting experiences across regions. It is hoped that this exercise will provide valuable insight into the future development of effective international instruments for water resources.

E. Integrated freshwater-coastal area management

31. Freshwater does not stop flowing at river mouths: much of it continues flowing downstream in one manner or another, eventually entering coastal waters. While recognizing the drainage basin as the fundamental freshwater management unit, consideration should also be given to the need to design integrated water management plans that encompass the management needs of both the freshwater and coastal areas.

32. UNEP has been a pioneer in addressing integrated coastal area and river basin management, as a logical follow-up to its work in integrated river basin management and integrated coastal zone management. Some other United Nations agencies, most notably the United Nations Development Programme (UNDP), are also considering this integrated approach to freshwater and coastal area management. UNEP has recently finalized conceptual guidelines to enable Governments simultaneously to address the sustainable management and use of coastal waters and the river basins that drain into them.

33. UNEP will now undertake practical demonstrations to show that the identified guidelines and principles can, in fact, provide an effective policy development and implementation tool for Governments, particularly those constituting the regional seas programmes. The application of these guidelines to the integrated management of the freshwater resources of small island developing States also will be explored. Thus, UNEP will develop and implement demonstration projects that illustrate the practical use of these guidelines. It is expected that initial efforts will be developed and implemented through existing regional seas programmes, particularly those encompassing developing countries, and also consider the special needs of small island developing States.

F. Sustainable groundwater resources

34. As emphasized in this year's World Water Day, groundwater often represents a hidden asset. Unfortunately, this critical asset suffers all too often from its hidden nature, from the syndrome "out of sight, out of mind". In fact, more than half the world's population receives its drinking water supply from groundwater sources, especially for arid and semi-arid regions. Groundwater aquifers (the equivalent of river basins) have specific physical boundaries and hydrologic characteristics, and are implicitly included within the context of integrated river basin management. They are also very sensitive to human impacts, however, given their location beneath the land surface, the manner in which water is supplied to them via specific "recharge zones", the typically very slow movement of the water contained in them, and the long period required for flushing pollutants from them.

35. Accordingly, it is anticipated that UNEP will initiative activities specifically addressed to the sustainable management and use of these valuable freshwater resources. UNEP already works with collaborative partners such as the British Geological Society on such issues, within the context of its GEMS/Water activities. UNEP will intensify its efforts during the 2000-2001 biennium to provide practical information on the environmental aspects of managing and using groundwater resources in a sustainable manner.

G. Public awareness and education

36. Human activities are generally at the core of all significant freshwater management and use problems. UNEP has found, however, that many people around the world have little or no appreciation of their role in causing these problems, particularly those who live far from water bodies. In addition, while other people may acknowledge that their activities can have a minor impact on water quality, they typically do not understand or appreciate the potentially substantial cumulative impact of a multitude of

such "minor" impacts. While UNEP has been relatively successful in developing and disseminating information on coastal and marine water-related issues, the same cannot be said for freshwater issues.

37. To correct this situation, UNEP will embark on an extensive programme of public education and awareness activities focusing on the role of the natural environment in supporting human existence and well-being, and the linkages between human life and the protection and sustainable use of freshwater resources. Preventing water-related problems typically costs less than correcting them. Thus, a particular goal will be to demonstrate that ignoring such issues now can result in a much higher price tag to correct them in the future. To this end, UNEP will give particular attention, first, to highlighting major freshwater issues and problems; second, identifying the role of the public in causing or accentuating these problems; and third, to identifying the role of the public in helping to solve them. It is hoped that such activities will also help bring freshwater resource issues to the top of national and international political agendas.

VI. FRESHWATER COLLABORATION, COOPERATION AND PARTNERSHIPS

38. As noted above, at its sixth session, the Commission on Sustainable Development called upon UNEP to make an effective contribution to the work of the Commission, including enhanced collaboration with other members of the ACC Subcommittee on Water Resources, by providing policy, technical and scientific advice on environmental aspects of the sustainable development of freshwater resources. To this end, UNEP will work to enhance inter-agency collaboration in addressing significant freshwater issues.

39. Notwithstanding the collaborative efforts of United Nations agencies within the context of the ACC Subcommittee, there is clearly room for improvement. In its role as Chair of the Water Working Group of the United Nations System-wide Special Initiative on Africa, for example, UNEP came to the realization that, notwithstanding the number of United Nations agencies working on freshwater issues in Africa, a lack of inter-agency collaboration was a major obstacle to effectively addressing Africa's freshwater needs and issues.

40. In addition, the sectoral approach to freshwater resources that characterizes current water-related activities within the United Nations system remains a major obstacle to implementing the integrated approach which United Nations agencies identified as the most logical approach for addressing sustainable freshwater resource issues. The need for collaboration is further evident in the fragmentation of responsibility and authority for freshwater among multiple agencies within national Governments, as well as among United Nations agencies, which poses a substantial obstacle to effective and sustainable water use.

41. In facilitating the integrated management of freshwater resources, UNEP has traditionally sought the cooperation and assistance of regional organizations that adequately represented the interests of all the major water users and uses within a drainage basin. At the same time, UNEP could probably have made more use of other, perhaps more unconventional, partners in promoting its water-related work.

42. To cite one example, and noting that industry is identified by many as having a major role in causing water pollution, UNEP completed a collaborative activity with the World Business Council on Sustainable Development (WBCSD). The result was the joint benchmark publication, Industry, Freshwater and Sustainable Development published in April 1998. In addition to discussing the contributory role of industry in polluting freshwater resources, the publication also highlighted the substantial role that industry could play in regard to assisting Governments and other partners to address the freshwater needs of people, agriculture, industry and the environment in a sustainable manner. The success of such collaborative partnerships will provide guidance to UNEP for similar activities in the area of sustainable freshwater resources for other industries, particularly in developing countries. Furthermore, the range of water-related expertise that is available within Governments and other international organizations was identified at the second meeting of the UNEP High-Level Committee of Ministers and Officials.

43. Accordingly, UNEP will continue to work to facilitate cooperation, collaboration and partnerships in the area of freshwater resources, with the dual goal of gaining valuable insight and experience regarding specific water-related activities, as well as helping such partners to refine their own water practices so as to ensure sustainable water supplies and water use. These enhanced partnerships will include both in-house UNEP offices, such as the International Environmental Technology Centre (IETC) in Japan and the Division of Technology, Industry and Economics, other United Nations entities and other intergovernmental organizations and non-governmental organizations such as WBCSD and related private sector parties, the Global Water Partnership, the World Water Council, the World Commission on Dams, the International Geosphere-Biosphere Programme (IGBP), Wetlands International and the World Conservation Union (IUCN).

Annex

FRESHWATER STRATEGY OF THE UNITED NATIONS ENVIRONMENT PROGRAMME, FOLLOWING THE SPECIAL SESSION OF THE UNITED NATIONS FOR THE PURPOSE OF AN OVERALL REVIEW AND APPRAISAL OF THE IMPLEMENTATION OF AGENDA 21 2/

I. PERSPECTIVES AND KEY ISSUES OF CONCERN IN THE AREA OF FRESHWATER RESOURCES

1. Recent years have seen a keen revival of interest in the topic of freshwater resources. The topic has already been the subject of attention by Governments, the United Nations and international organizations on a number of occasions in the past, notably at the United Nations Water Conference, held in Mar del Plata in 1977, at the United Nations Conference on Environment and Development, held at Rio de Janeiro in 1992, and at the International Ministerial Conference on Drinking Water And Environmental Sanitation, held in Noordwijck in 1994, as well as at the International Conference on Water and the Environment, held at Dublin in 1992. Indeed, the provision of water for drinking water supply, sanitation and the irrigation of food crops constituted one of humanity's oldest and most fundamental tasks and remains a matter of key importance even today.

2. It is clear that our need for adequate supplies of freshwater, for both human survival and social and economic development, will remain a major issue in the ongoing intergovernmental dialogue, and occupy centre stage during the deliberations of the Commission on Sustainable Development at its sixth session. The primary concerns appear to revolve around the need to manage and use the world's available freshwater resources in a way:

(a) That is sustainable over the long term, and protects the resource;

(b) That maximizes water-related benefits for the majority of people in a drainage basin;

(c) That addresses all significant human and ecosystem water needs; and

(d) That ensures the participation of all relevant parties in the water allocation process and at the appropriate level.

2/ This strategy was originally presented to the second meeting of the High-level Committee of Ministers and Officials in the report of the Executive Director on the subject (UNEP/HLC/2/4). The introductory paragraph contained in that report has not been reproduced in this document and some passages addressed specifically to the High-Level Committee of Ministers and Officials have been amended or deleted, as appropriate. Additional amendments have also been made with a view to highlighting, in particular, the role played by UNEP in the environmental aspects of freshwater management.

3. Economic costs are an obvious and fundamental constraint to achieving sustainable water supplies. Evidence now exists, however, that the needed capital investments are well worth the results. For example, the World Bank has recently estimated that it would cost US$ 600 billion to build and upgrade water-supply facilities around the world over the next decade. While this figure may seem astronomical, it is trivial when compared to the estimated value of the water-related services already provided by nature to humans.

4. In a ground-breaking exercise reported in a recent edition of the scientific journal Nature, a group of economists and ecologists attempted to place an economic value on the services provided to humans by ecological systems, including such functions as water regulation and supply, nutrient cycling, waste treatment and climate regulation. Notwithstanding the complexities involved in placing a value on the contributions of environmental ecosystems to human welfare, and acknowledging the various assumptions necessary to make such estimations, the group nevertheless estimated that the current economic value of water-related ecosystems around the world was, on average, $28.5 trillion per year. This was about 86 per cent of the total estimated annual value of $33 trillion of the entire group of 17 ecosystems examined in the study. In addition, some water-related ecosystems were found to be especially valuable with respect to their specific functions of value to humans. The ecological services provided by wetlands, for example, was estimated to average about $15,000 per hectare per year, while those for lakes and rivers averaged about $8,500 per hectare per year. Those for coastal waters, which represent the recipients of water and materials draining from rivers into the oceans, averaged nearly $23,000 per hectare per year. In providing these estimates, the researchers also pointed out that they represent a minimum estimate of the value of these ecological services.

5. The recent focus of the United Nations system on freshwater issues is a response to the decline in the supply of readily available freshwater supplies, as well as to the continuing degradation of the existing sources. Prominent among the reasons for this heightened concern, including those related to the environmental aspects of freshwater resources, are the following:

(a) An adequate supply of safe, clean freshwater is the most important precondition for sustaining human life, for maintaining ecosystems that support all life, and for achieving sustainable development;

(b) Water is abundant throughout the world on a regional basis, but is unevenly distributed by nature. Although some countries have high annual per capita water availability, many others are already facing, or will soon face, conditions of water stress (2,000 cubic metres or less per person per year), or water scarcity (1,000 cubic metres per person per year), in which their populations cannot be sustained with their available freshwater resources;

(c) Throughout the world, freshwater is also allocated unfairly by humans. With recurring droughts and chronic water shortages in many regions, many countries and people pay an increasingly high price for water, or the lack of it. The highest price is often paid by the poor majority, in terms

of the money paid out to buy small quantities of water, the calories expended to retrieve freshwater from distance sources, the damage to human health, the deterioration of livelihoods, and even the loss of lives;

(d) With increasing population growth, industrialization and urbanization, the supply of readily available and replenishable freshwater resources is nearing exhaustion in many regions, while, in others, it is already exhausted, with significant implications for both human and ecosystem water needs;

(e) The 1997 report of the Secretary-General on a comprehensive assessment of the freshwater resources of the world (E/CN.17/1997/9), prepared by United Nations agencies, including UNEP, for the Commission on Sustainable Development, estimates that one third of the world's population already live under water-stress conditions and predicts that, by the year 2025, that level will rise to two thirds of the world's population, with the worst conditions occurring in the regions least able to address the problems;

(f) Prominent among the reasons why a significant proportion of the world's population currently does not have access to adequate supplies of safe water and sanitation are, first, the prevailing - and incorrect - view that water will be perpetually available, and at relatively cheap prices; second, the fact that water previously had a low priority on global and national political agendas; third, the lack of coordination among freshwater managers and users, resulting in the fragmentation of decision-making authority for water across many sectors and departments at the national and international levels, including United Nations agencies; and, fourth, the lack of a common vision by the actors involved;

(g) There are about 300 transboundary river basins, as well as numerous groundwater aquifers which are shared by two or more countries. Yet, there are very few international agreements or conventions, or even relevant laws and regulations, to provide for the sustainable management and use of these freshwater resources. This deficiency further increases the possibility of conflicts over these resources in the future. At the national and regional levels, there also are numerous instances of the inefficient and wasteful use of freshwater resources;

(h) Public awareness activities, particularly those directed at informing the general public of the role they may play in causing the waste and degradation of water supplies, as well as their importance in helping to solve these problems, are inadequate in many regions throughout the world.

II. INTEGRATED, MULTISECTORAL APPROACH TO THE SUSTAINABLE MANAGEMENT AND USE OF FRESHWATER RESOURCES

6. The key water-resource issues and challenges faced in meeting human and environmental needs within and among countries are reflected in chapter 18 of Agenda 21. The crucial issue faced by the modern world in regard to freshwater resources is how to meet those needs in an efficient, timely and sustainable manner. The need to solve this problem is becoming ever more urgent because, while humanity has continued to increase in number and, with it, its need for water, the amount of freshwater on Earth remains constant.

We are slowly, but surely, overwhelming nature's ability to supply this critical natural resource - and, in some areas, have already done so. Consequently, the notion of integrated management and use of freshwater resources is of paramount importance in addressing water-related problems.

7. It is essential that a better definition be found and agreed upon of the fundamental notion of integrated management. Under an integrated water management programme, all the relevant components must be addressed in a comprehensive and sustainable package, taking the drainage basin or groundwater aquifer as the basic freshwater management unit. There are common water quality and quantity problems throughout the world. Accordingly, an integrated approach must be followed, not only across sectors and administrative boundaries, but also across types of water (simultaneously considering both freshwater and the coastal waters into which it drains), and across disciplines. If freshwater resources are to be managed in a sustainable manner, many components must be taken into consideration, including the relationship between water supply and water demands, land-based pollutant sources, physical basin characteristics, economic and legal aspects, institutional capacities, local customs and cultural norms, education standards, demographic and political considerations, etc. Governments also must agree on how these elements should be considered in developing and implementing integrated approaches for the environmentally sustainable management and use of freshwater resources. Within this context, it is clear that the following environmental considerations must be addressed:

(a) The protection, conservation and more efficient use of freshwater resources must be accorded a much higher priority in the future plans and budgets of Governments. In many areas, irrigated agriculture is already the major freshwater use. Accordingly, one priority is to ensure that the use of freshwater for irrigation is more effective, with proper incentives for water quality protection and increased efficiency. Industrial and urban areas can also reduce freshwater use, thereby bringing down water pollution and treatment costs, increasing capacity to meet new water demands, and postponing or eliminating the need for expensive new dams, wells or water treatment plants;

(b) Many "national" rivers, lakes and groundwater resources are in fact used by two or more countries. Yet, few transboundary freshwater basins or groundwater aquifers are covered by effective agreements regarding the equitable use and environmental protection of these water resources. The uncoordinated exploitation of transboundary water resources is already causing significant adverse environmental, agricultural and social impacts in many basins. To ensure sustainable water use, as well as to avoid serious conflicts over the unsustainable use of transboundary water resources, new and more effective agreements on the management of transboundary water systems and measuring for avoiding or resolving water-related disputes are urgently needed;

(c) With rising demands and increasing competition among various water uses and users, a community-based and multi-stakeholder approach is crucial for ensuring that decisions are both fair and effective, especially in water-stressed and water-scarce areas, where the conservation and efficient use of water is often a matter of life and death;

(d) An equitable allocation of freshwater among competing uses and users, especially agriculture, industry and municipal and household users, must be given high priority on water and sustainable development agendas;

(e) Human survival and social and economic development require that aquatic habitats and ecosystems, and their living resources, also receive their necessary share of available freshwater. With increasing human water demands, there is a high risk that nature will not receive its share. Thus, efforts also must be made to address problems associated with the damming, diverting and pollution of watercourses.

8. The main political, economic and social goal for Governments in the next decade is to ensure that their populations receive an equitable share of safe water and water-based services. Ecosystems of value to humans must also receive their needed input of freshwater to protect and conserve their functions critical for the survival of humans. To these ends, therefore, a fair share of national and local authority budgets must be allocated to meet the water and water-based needs of both humanity and ecosystems of value to humans.

III. FOCUS AND IMPERATIVES OF THE UNITED NATIONS SPECIAL SESSION AND THE COMMISION ON SUSTAINABLE DEVELOPMENT

9. Both the Commission for Sustainable Development, at its fourth and fifth sessions, and the General Assembly, at its special session for the purpose of an overall review and appraisal of the implementation of Agenda 21, emphasized the essential role of freshwater in satisfying basic human health, food and survival needs, for preserving essential ecosystems and for economic and social development. They further highlighted specific issues to be addressed in ensuring that water resources are managed and used in an environmentally sustainable manner in the attainment of development goals. As outlined in paragraph 34 of the Programme for the Further Implementation of Agenda 21, adopted by the General Assembly in its resolution S/19-2 of 28 June 1997, there is an urgent need:

(a) To assign high priority, in accordance with specific national needs and conditions, to the formulation and implementation of policies and programmes for integrated watershed management, including issues related to pollution and waste, the interrelationship between water and land, including mountains, forests, upstream and downstream users, estuarine environments, biodiversity and the preservation of aquatic ecosystems, wetlands, climate and land degradation and desertification, recognizing that subnational, national and regional approaches to fresh-water protection and consumption following a watershed basin or river basin approach offer a useful model for the protection of fresh-water supplies;

(b) To strengthen regional and international cooperation for technological transfer and the financing of integrated water resources programmes and projects, in particular those designed to increase access to safe water supply and sanitation;

(c) To ensure the continued participation of local communities, and women in particular, in the management of water resources development and use;

(d) To provide an enabling national and international environment that encourages investments from public and private sources to improve water supply and sanitation services, especially in fast growing urban and peri-urban areas, as well as in poor rural communities in developing countries; and for the international community to adopt and implement commitments to support the efforts to assist developing countries in achieving access to safe drinking water and sanitation for all;

(e) To recognize water as a social and economic good with a vital role in the satisfaction of basic human needs, food security, poverty alleviation and the protection of ecosystems. Economic valuation of water should be seen within the context of its social and economic implications, reflecting the importance of meeting basic needs. Consideration should be given to the gradual implementation of pricing policies that are geared towards cost recovery and the equitable and efficient allocation of water, including the promotion of water conservation, in developed countries; such policies could also be considered in developing countries when they reach an appropriate stage in their development, so as to promote the harmonious management and development of scarce water resources and generate financial resources for investment in new water supply and treatment facilities. Such strategies should also include programmes assigned to minimize wasteful consumption of water;

(f) To strengthen the capability of Governments and international institutions to collect and manage information, including scientific, social and environmental data, in order to facilitate the integrated assessment and management of water resources, and foster regional and international cooperation for information dissemination and exchange through cooperative approaches among United Nations institutions, including the United Nations Environment Programme, and centres for environmental excellence. In this regard, technical assistance to developing countries will continue to be important.

10. To facilitate the attainment of these objective, the final document goes on to state, in paragraph 35: "Governments call for a dialogue under the aegis of the Commission on Sustainable Development, beginning at its sixth session, aimed at building a consensus on the necessary actions, and in particular, on the means of implementation and on tangible results, in order to consider initiating a strategic approach for the implementation of all aspects of the sustainable use of fresh water for social and economic purposes, including, inter alia, safe drinking water and sanitation, water for irrigation, recycling, and waste-water management, and the important role fresh water plays in natural ecosystems."

IV. CURRENT STRATEGY OF UNEP, BASED ON ITS UNIQUE AND COMPARATIVE ADVANTAGES

11. The Mar del Plata Action Plan of the United Nations Water Conference, together with chapter 18 and other relevant chapters of Agenda 21, provide the framework for the programmes and activities of the organizations and bodies of the United Nations system. That framework is supplemented by relevant recommendations stemming from other conferences, such as the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. In this endeavour, UNEP has a major role to play in addressing the environmental aspects of the following four areas: water assessments (including both freshwater and coastal and marine waters); integrated water management; protection of water quality; and dispute avoidance and resolution.

12. As the principal United Nations agency in the field of the environment, UNEP continues to play a critical and innovative role in encouraging an environmentally sustainable approach to the conservation of freshwater resources. Its experience in addressing environmental issues over the last 25 years places UNEP in a strong position to continue providing scientific and technical expertise and a range of diverse services, as well as undertaking specific activities, in support of the environmental components of the freshwater goals identified in chapter 18 of Agenda 21. Over this period, UNEP has provided effective leadership in a number of areas:

(a) Through its integrated programme for the environmentally sound management of inland waters (EMINWA), UNEP facilitates the development of intergovernmental agreements for the environmentally sustainable management and use of transboundary water resources. Relevant activities include: diagnostic analyses of the quantity and quality of freshwater resources at the level of drainage basins and groundwater aquifers; factors affecting human water uses; and the causes and effects of, and solutions to, water-related environmental problems. UNEP is working with riparian Governments in developing and facilitating the implementation of action programmes to address water-related problems identified in the diagnostic phase;

(b) Within the context of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, UNEP freshwater efforts focus on the assessment and control of the land-based activities and pollutant sources within river basins draining to coastal waters. As secretariat of the Global Programme of Action, UNEP also facilitates consensus-building and actions to address relevant interrelated land, freshwater and coastal issues;

(c) In the area of transboundary waters, UNEP, through its role as an implementing agency of the Global Environment Facility (GEF), is concerned with efforts in the following areas: the preparation of transboundary diagnostic analyses; regional and global reviews of threats to freshwater and associated coastal and marine waters; and control of the pollution of transboundary waters;

(d) Within the framework of United Nations system-wide global and regional initiatives, UNEP is working to coordinate United Nations agency efforts to achieve specific social, economic and environmental objectives in the sustainable use of freshwater resources. One example is the United Nations System-wide Special Initiative on Africa, in which UNEP is working to implement its "Fair Share" freshwater strategy, designed to ensure equity in regard to maximizing the benefits of the water resources within drainage basins for all users, including the poor majority.

13. Within its environmental mandate, UNEP is also directing substantial attention to:

(a) Facilitating comprehensive monitoring programmes and assessment of the environmental status, quality and quantity of water resources and the root causative factors of any water-related problems identified therein, in cooperation with United Nations and other agencies and organizations;

(b) Facilitating global and regional multilateral agreements for transboundary waters;

(c) Enhancing public awareness regarding the role of the natural environment in supporting human existence and well-being, and the interlinkages between human life and the protection and sustainable use of water resources;

(d) Facilitating the development and application of practical legal, economic, institutional and political tools for addressing the environmental aspects of integrated water management action plans.

V. WATER-RELATED ISSUES FOR CONSIDERATION BY UNEP

14. Water-related issues that would benefit from the views and policy recommendations of the UNEP Governing Council include:

(a) Measures to strengthen the current UNEP freshwater strategy; and

(b) Measures to ensure effective UNEP participation in intergovernmental policy discussions and dialogue on freshwater issues.

A. Measures to strengthen the current UNEP freshwater strategy

15. Consideration should be given to the environmental aspects of the following measures, with a view to strengthening the current strategy and activities of UNEP in the areas of freshwater:

1. Monitoring and assessment

16. Some of the most important environmental work carried out by UNEP is in the area of environmental assessments, in particular, in developing a better understanding of the state of freshwater resources at the global, regional and subregional levels, and in identifying and facilitating effective corrective actions in regard to the environmental aspects of any water-related problems. The major water-related assessment activities

performed by UNEP include the identification and analysis, first, of changes and trends in the state of water quality and quantity on a global, regional and subregional basis; second, of sources and impacts of land-based activities and pollutants; and, third, of the associated social and economic driving factors (e.g., economics, law, institutions, politics). As discussed below, the major water-related assessments currently being conducted or planned by UNEP include: the Global Environment Monitoring System (GEMS/Water); the Global International Waters Assessment; land-based activities and marine impact assessments of the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP); and the Global Environment Outlook (GEO) report series.

17. As one of the three GEF implementing agencies, UNEP has a major responsibility in regard to water-related projects within the context of the GEF International Waters Portfolio. Currently, UNEP is developing a GEF project for a global international waters assessment. The purpose is to provide Governments and other relevant parties with a scientifically sound information base on freshwater, coastal and marine water problems and issues at the regional and subregional level, with a view to assisting Governments in setting international waters priorities.

18. The only global freshwater quality monitoring and assessment programme within the United Nations system is the UNEP GEMS/Water programme, implemented in cooperation with the World Health Organization (WHO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and other United Nations partners. The UNEP Water Branch, in cooperation with its Assessment Division, is currently working with many GEMS/Water collaborating centres in an effort to refine the GEMS/Water programme. The ultimate goal is to ensure that the GEMS/Water programme provides data and information that are useful both for drawing scientifically sound conclusions about the state of the world's freshwater resources, and for assisting in decision-making and policy development. To this end, UNEP and its sister United Nations agencies also contributed to the preparation of the report on a comprehensive global assessment of the freshwater resources of the world, requested by the Commission on Sustainable Development.

19. UNEP will continue to place high priority on its monitoring and assessment capabilities. Consistent with the findings of the UNEP Global Environment Outlook 1997 report, which set the environmental context for discussions at the special session of the General Assembly for the purpose of an overall review and appraisal of the implementation of Agenda 21, UNEP monitoring and assessment activities provide a basis for developing corrective actions in many important transboundary water systems, such as the Aral Sea, the San Juan river, the Mekong river, the Zambezi river, the Caspian Sea and the Lake Titicaca drainage basins.

2. Integrated water resource management

20. With regard to the environmental aspects of integrated water resource management, UNEP will intensify its efforts to facilitate integration of freshwater, coastal and ocean systems within a single water-management continuum. In this undertaking, UNEP is working to overcome the limitations of administrative boundaries or arbitrary distances inland from the coastline as a basis for integrated coastal zone management. This approach also

underpins the activities of UNEP as secretariat of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

21. UNEP will further apply its lessons learned in regard to the environmental aspects of integrated water resource management, working both within the United Nations system and with other international and non-governmental organizations, the private sector and civil society, in helping Governments to develop and implement practical policies and actions to achieve the environmentally-sustainable management and use of transboundary water resources.

22. UNEP is particularly well-placed to follow a comprehensive, integrated approach in tackling the multisectoral aspects of freshwater issues. It is able to bring greater attention to bear on the linkages between water and other environmental components, including, inter alia, land, biodiversity, persistent organic pollutants and climate change.

23. On the basis of its experience with freshwater issues in developing regions and through its chairmanship of the Water Working Group of the Secretary-General's United Nations System-wide Special Initiative on Africa, UNEP will pay special attention to the possibilities of small-scale, collaborative demonstration projects, as a means of promoting equity in regard to freshwater benefits. In supporting the Special Initiative, UNEP has concluded that large-scale water projects will not necessarily work to the benefit of all basin inhabitants, particularly for developing countries. In contrast, small-scale demonstration projects, focusing on indigenous and environmentally-sound technologies, may provide a rational means of ensuring an equitable distribution of the benefits, including environmental benefits, of freshwater resources in developing countries.

3. Transboundary freshwater resources

24. Some of the most complex freshwater issues are inter-jurisdictional in nature, demanding the best efforts of international environmental diplomacy. The experience gained by UNEP over past years in brokering various international environmental agreements has given it the necessary expertise to review international legally binding instruments, including their roles, gaps, strengths and limitations. UNEP is also uniquely positioned to broker and facilitate negotiation of multilateral agreements for transboundary waters, as a means of ensuring that regional needs are adequately incorporated in such agreements. In addition, UNEP will continue to assist riparian Governments, upon request, in the collaborative development of their transboundary watercourses in an environmentally sustainable manner.

25. The potential for conflicts between riparian countries sharing common freshwater resources nevertheless remains. Such conflicts can only be avoided through a process of honest brokerage of the relevant issues, including environmental issues, between riparian Governments. To this end, UNEP will further apply its experiences with transboundary freshwater systems, such as the basins of the San Juan and Zambezi rivers, the Caspian Sea and Lake Titicaca.

4. Technology development and transfer

26. At its special session, the General Assembly called for the strengthening of regional and international cooperation in regard to technology transfer, as well as for the financing of integrated water resource programmes and projects. In response, and in collaboration with the UNEP International Environmental Technology Centre (IETC) and the UNEP Division of Technology, Industry and Economics, the Water Branch is working to identify and assess environmentally sound, water-related technologies and their effectiveness in many regions of the world.

27. To this end, a series of UNEP-sponsored regional workshops has been conducted, to enable experts and officials to share their experiences in the area of alternative, environmentally sound technologies and approaches to freshwater issues. The purpose of the workshops was to examine the costs, effectiveness, strengths and limitations of alternative technologies for addressing freshwater issues. One important output of these workshops was a series of source books, providing guidance for identifying and choosing between alternative technologies. UNEP will also prepare a global version of these source books, designed for decision makers and managers.

5. Economic instruments

28. The economic valuation of freshwater resources, particularly in regard to water-related environmental issues, is another major area in which UNEP will use its experience. UNEP has already convened a number of regional workshops to highlight the economic consequences of environmentally unsustainable water use. In collaboration with the UNEP Environmental Economics and Trade Unit, the Water Branch will intensify its work on such issues as water pricing and water subsidies, as related to the environmental aspects of freshwater resources.

6. Public awareness, education and participation

29. In addition to the importance it attaches to education and information, UNEP believes that civil society must be actively involved in the sustainable management and use of all environmental resources, including freshwater. In facilitating such involvement, UNEP is focusing on effective public participation at the grassroots level. One example of such participation is, as noted above, the "Fair Share" approach for addressing the issue of water equity in the Special Initiative on Africa.

30. The notion of local ownership, as well as the fundamental role of women in managing and using freshwater resources in an environmentally sustainable manner, together constitute a cornerstone of successful freshwater resource management, particularly in developing countries. To this end, UNEP will incorporate a strong public awareness component in all its water-related programmes. Through its Global Environmental Citizenship programme, UNEP will also target specific sectors of civil society - women, parliamentarians, the media, educators and others - to ensure that communities and citizens are better informed with regard to their role in causing, and solving, freshwater problems.

31. Within the extent of its limited resources, many of the measures noted above are currently being implemented by UNEP, in partnership with Governments, agencies and organizations. Others are targeted for particular attention in the UNEP work programme for the 1998-1999 biennium and beyond, in the expectation that the necessary financial and human resources will be available to UNEP in a timely manner. Future developments, such as the outcome of the intergovernmental discussions at the sixth session of the Commission on Sustainable Development, may also have significant implications for the future work programme and activities of UNEP in the area of freshwater resources, the latter also predicated on the availability of adequate financial and human resources.

B. Measures for an effective UNEP participation in the intergovernmental policy discussions and dialogue on freshwater issues

32. It is reiterated that UNEP should actively participate in many collaborative arrangements regarding the integrated assessment, management and use of freshwater resources. These include the ACC Subcommittee on Water Resources, which was designated as the task manager responsible for reporting on the implementation of chapter 18 of Agenda 21. As the agency responsible within the United Nations system for policy guidance and coordination in the field of the environment, UNEP will continue to work closely with the ACC Subcommittee and its partner United Nations agencies, to ensure that the relevant environmental perspectives inherent in these measures are fully considered in the intergovernmental policy discussions on freshwater resources.

33. As emphasized in chapter 38 of Agenda 21, and reconfirmed by the Commission on Sustainable Development, UNEP has a primary role, within the United Nations system, in the area of policy guidance and coordination in the field of the environment. Within this role, it has the major responsibility to facilitate the integration of the environmental aspects of social and economic development into policy discussions involving freshwater issues.

34. In carrying out this role, the goal pursued by UNEP is to ensure that high priority is given to the protection, conservation and more efficient use of freshwater resources, both for human survival and for the maintenance and protection of ecosystems of value to humans. UNEP is particularly concerned that the notion of sustainable development, at a time of fiscal austerity in many countries, may be slowly eroding to a point where it is merely development. In this context, the argument has been advanced that the achievement of sustainable freshwater resources is a local or national issue, which does not require concerted global or regional efforts. The evidence in many regions, however, of the continuing decline in, and increasing degradation of, transboundary water systems clearly does not support this view.

35. Accordingly, the Governing Council may wish to recall that both the Commission on Sustainable Development and the General Assembly have already emphasized a number of points to be taken into account in the policy discussions to address freshwater issues, including the following:

(a) The General Assembly and the Economic and Social Council, as well as two of the Assembly's subsidiary bodies, the Commission on Sustainable Development and the Committee on Natural Resources, are the main intergovernmental bodies for the provision of policy and guidance in the area of freshwater resources within the United Nation system. The Commission on Sustainable Development also provides a forum for high-level discussions on freshwater resources within the context of Agenda 21;

(b) Following its review of the comprehensive assessment of the world's freshwater resources at its fifth session, the Commission on Sustainable Development recommended that the General Assembly, at its special session for the purpose of an overall review and appraisal of the implementation of Agenda 21, should call, first, for the highest priority to be given to the serious freshwater problems facing many regions, especially in the developing world; and, second, for a dialogue under the auspices of the Commission on Sustainable Development, beginning at its sixth session, to build a consensus on the necessary actions, in particular, the means of implementation, and on the tangible results necessary for the initiation of a strategic approach for the implementation of all aspects of the sustainable use of freshwater for social and economic purposes;

(c) The Commission on Sustainable Development also emphasized that such an intergovernmental review process would only be fruitful if there was a proved commitment by the international community to provide new and additional financial resources for achieving the goals of such an initiative;

(d) The Commission on Sustainable Development also realized that a successful outcome of the dialogue called for at its fifth session would require the full support of the organizations and bodies of the United Nations system, in partnership with non-governmental organizations, other major groups and the private sector. It also noted that the Subcommittee on Water Resources of the Administrative Committee on Coordination (ACC) and its relevant organizations will need to devote their energies in the period leading to the sixth session of the Commission on Sustainable Development to elucidating major water-related issues, particularly those enumerated above, as well as to providing policy approaches for consideration in the intergovernmental process;

(e) To assist the Committee on Natural Resources, UNEP convened a series of workshops of government-designated experts for the purpose of determining the status of implementation of chapter 18 of Agenda 21 on a regional basis. To achieve this goal, UNEP convened regional expert group meetings in collaboration with its regional offices, the regional economic commissions and many of the organizations previously identified, to assess the implications of chapter 18 for the integrated management and use of freshwater resources, and also to assess the progress made - as well as that still needed - in implementing the objectives of chapter 18. The experiences gained in these workshops will enable UNEP to promote intergovernmental dialogue at the regional level. To this end, UNEP is analysing and summarizing this information as a relevant input into the deliberations of the Commission on Sustainable Development at its sixth session.

36. In addition to its ongoing activities (see section A above), an essential component of the contribution by UNEP to the sixth session of the Commission on Sustainable Development and beyond will be to encourage a more direct engagement of its member Governments and partner institutions in the approaches proposed below. To facilitate this engagement, and building on the activities UNEP is best placed to undertake, the Governing Council is invited to express its views on the following items and their financial implications.

1. Dialogue at the regional level

37. On the basis of the outcome of recent regional expert group meetings on chapter 18 of Agenda 21, regional and subregional forums should be organized to develop a common vision and common perspectives on the priority freshwater-related issues identified by the special session, as well as to enable government representatives and experts to provide policy inputs and advice on the full range of environmental and social and economic issues related to sustainable freshwater resources. Such efforts could be strongly promoted through the UNEP regional offices, as well as through its existing frameworks for regional cooperation and programmes. The latter include such UNEP-supported regional forums as the ministerial conferences on the environment, the regional seas programmes and intergovernmental agreements on transboundary river basins.

38. The status of implementation of the goals and objectives of chapter 18 ("Protection of the quality and supply of freshwater resources: Application of integrated approaches to the development, management and use of water resources") of Agenda 21, including the facilitation of regional and subregional forums, should be kept under review. The purpose of such forums is to ensure that Governments, and other relevant bodies and organizations, inspire sound policy discussions and decisions on freshwater issues.

2. Best practices

39. Efforts should be made to promote the exchange and dissemination of information on sound policy responses and cost-effective technologies, and experiences and lessons learned, at the subregional, regional and global levels, in the environmentally sustainable management and use of freshwater resources.

40. Partnerships should be strengthened with major groups, such as the Water Supply and Sanitation Collaborative Council, the World Water Council, the Global Water Partnership, and regional institutions and networks, as a means of drawing on the range of available expertise in identifying best practice responses to environment-related freshwater issues at all levels.

41. There is a need to develop environmental perspectives and to facilitate discussions on best practice responses with regard to policy, institutional, legal and economic options for addressing the environmental aspects of critical freshwater issues.

42. The application of environmental standards and guidelines based on best practice policy responses must be developed and facilitated.

3. Awareness-raising

43. Policy-relevant documents on the environmental aspects of freshwater issues should be developed for use by Governments to facilitate incorporation of environmental considerations in sustainable social and economic development programmes.

44. Awareness must be raised at all levels on the environmental dimensions of the major freshwater issues highlighted by the General Assembly at its special session and by the Commission on Sustainable Development, through a process of advocacy to stimulate interest in freshwater issues as a means of creating commitment and political will.

45. Regional, subregional and basin-level dialogue must be fostered among countries, by ensuring broad participation and stimulating the exchange of environmental experiences and best practices.

46. In conclusion, on the basis of the foregoing, the Governing Council may wish to assess the efficacy of the approach being taken by UNEP, and to provide its views on the priorities to be addressed with a view to guiding the preparation by the secretariat of its contribution to the intergovernmental discussions that will take place under the auspices of the Commission on Sustainable Development at its next session and beyond.